MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

Auburn Gear, Inc.
400 East Auburn Drive
Auburn, Indiana 46706

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 033-13672-00015	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 10, 2001 Expiration Date: August 10, 2006

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary source relating to the operation of differential, shaft and gear manufacturing facility.

Authorized Individual:	George Callas
Source Address:	400 East Auburn Drive, Auburn, Indiana 46706
Mailing Address:	400 East Auburn Drive, Auburn, Indiana 46706
Phone Number:	(219) 925-3200
SIC Code:	3566
County Location:	DeKalb
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

(a) Two (2) natural gas fired boilers, identified as Plant boiler # 1 and # 2, each with a maximum heat input rate of 5.146 million (MM) British thermal units (Btu) per hour, each exhausting through one (1) stack, identified as BO 1 and BO 2, respectively, and each installed in 1955.

(b) One (1) natural gas fired boiler, identified as office hot water boiler (BO 3), with a maximum heat input rate of 1.155 MMBtu/hr, exhausting through one (1) stack, identified as S34, and installed in 1961.

(c) One (1) shot blaster, identified as Wheelabrator Tumblast (SB-836), blasting cast steel S-460 with a maximum rate of 714 lbs/hr, using a baghouse as control, and exhausting through one (1) stack identified as S45.

(d) One (1) shot blaster, identified as Panghorn Rotoblast (SB-159), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(e) One (1) shot blaster, identified as Wheelabrator Type K Multi Tblblast (SB-185), blasting cast steel S-230 with a maximum rate of 716 lbs/hr, using a baghouse as control, and exhausting inside the building.

(f) One (1) shot blaster, identified as Panghor Rotoblast (SB-821), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(g) One (1) shot blaster, identified as No. 2 Wheelabrator Tablablast (SB-859), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(h) Three (3) Rx atmosphere gas generators, identified as K-30, K-41, and K-304, each with a maximum heat input capacity of 0.455 MMBtu/hr, and each exhausting through one (1) stack, identified as S 10, S 11 and S 8, respectively.

(i) One (1) heated water spray washer, identified as 40, with a maximum heat input rate of 0.076, and exhausting through two (2) stacks, identified as S 22 and S 23.

(j) One (1) heated water spray washer, identified as 50, with a maximum heat input rate of 0.152, and exhausting through two (2) stacks, identified as S 28 and S 30.

(k) One (1) carburization & draw furnace with washer, identified as K-22, with a maximum heat input rate of 11.54 MMBtu/hr, and exhausting through five (5) stacks, identified as S 40, S 41, S 42, S 43, and S 44.

(l) One (1) carburization & draw furnace, identified as K-30, with a maximum heat input rate of 2.35 MMBtu/hr, and exhausting through six (6) stacks, identified as S 21, S 14, S 12, S 13, S 15 and S 16.

(m) One (1) all case carburization & draw furnace, identified as K-41, with a maximum heat input rate of 0.379 MMBtu/hr, and exhausting through one (1) stack, identified as S 20.

(n) One (1) carburization & draw furnace, identified as K-304, with a maximum heat input rate of 1.517 MMBtu/hr, and exhausting through four (4) stacks, identified as S 3, S 4, S 5, and S7.

(o) One (1) continuous draw furnace, identified as 831, with a maximum heat input rate of 0.25 MMBtu/hr, and exhausting through one (1) stack, identified as S 40.

(p) One (1) lubrite tank heater, with a maximum heat input rate of 0.2275 MMBtu/hr, and exhausting through one (1) stack, identified as S 31.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is not required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a minor source, as defined in 326 IAC 2-7-1(22);

(b) It is not an affected source under Title IV (Acid Deposition Control) of the Clean Air Act, as defined in 326 IAC 2-7-1(3);

(c) It is not a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled “Minor Source Operating Permit”, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.5 Permit Term [326 IAC 2-6.1-7]

This permit is issued for a fixed term of five (5) years from the original date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

(a) The total source potential to emit of any criteria pollutant is less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

(b) Any change or modification which may increase potential to emit to 250 tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

(c) Any change or modification which may increase:

(1) potential emissions of any regulated pollutant from this source to one-hundred (100) tons per year or more; or
(2) potential emissions of any single hazardous air pollutant (HAP) from this source to ten (10) tons per year or more; or
(3) potential emissions of any combination of HAPs from this source to twenty-five (25) tons per year or more,

shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.4 Inspection and Entry [326 IAC 2-7-6(2)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.7 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

Testing Requirements

C.9 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.10 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.11 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

Record Keeping and Reporting Requirements

C.12 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.13 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.14 General Record Keeping Requirements [326 IAC 2-6.1-2]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this permit;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.15 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(b) Unless otherwise specified in this permit, any report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:

(1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or

(2) A malfunction as described in 326 IAC 1-6-2; or

(3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

(4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

(d) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.16 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1 Emissions unit OPERATION CONDITIONS

Emissions Unit Description

(a) Two (2) natural gas fired boilers, identified as Plant boiler # 1 and # 2, each with a maximum heat input rate of 5.146 million (MM) British thermal units (Btu) per hour, each exhausting through one (1) stack, identified as BO 1 and BO 2, respectively, and each installed in 1955.

(b) One (1) natural gas fired boiler, identified as office hot water boiler (BO 3), with a maximum heat input rate of 1.155 MMBtu/hr, exhausting through one (1) stack, identified as S34, and installed in 1961.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate matter (PM) emissions from the three (3) natural gas fired boilers, all constructed before 1983 (ID Nos. Plant boiler #1, #2, and BO 3), rated at 5.146, 5.146, and 1.155 million British thermal units per hour, respectively, shall each be limited to 0.8 lb PM/MMBtu.

Compliance Determination Requirements

D.1.2 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emission units by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

There are no Compliance Monitoring Requirements applicable to these emission units.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

There are no Record Keeping and Reporting Requirements applicable to these emission units.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

(a) One (1) shot blaster, identified as Wheelabrator Tumblast (SB-836), blasting cast steel S-460 with a maximum rate of 714 lbs/hr, using a baghouse as control, and exhausting through one (1) stack identified as S45.

(b) One (1) shot blaster, identified as Panghorn Rotoblast (SB-159), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(c) One (1) shot blaster, identified as Wheelabrator Type K Multi Tblblast (SB-185), blasting cast steel S-230 with a maximum rate of 716 lbs/hr, using a baghouse as control, and exhausting inside the building.

(d) One (1) shot blaster, identified as Panghor Rotoblast (SB-821), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(e) One (1) shot blaster, identified as No. 2 Wheelabrator Tablablast (SB-859), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(f) Three (3) Rx atmosphere gas generators, identified as K-30, K-41, and K-304, each with a maximum heat input capacity of 0.455 MMBtu/hr, and each exhausting through one (1) stack, identified as S 10, S 11 and S 8, respectively.

(g) One (1) heated water spray washer, identified as 40, with a maximum heat input rate of 0.076, and exhausting through two (2) stacks, identified as S 22 and S 23.

(h) One (1) heated water spray washer, identified as 50, with a maximum heat input rate of 0.152, and exhausting through two (2) stacks, identified as S 28 and S 30.

(i) One (1) carburization & draw furnace with washer, identified as K-22, with a maximum heat input rate of 11.54 MMBtu/hr, and exhausting through five (5) stacks, identified as S 40, S 41, S 42, S 43, and S 44.

(j) One (1) carburization & draw furnace, identified as K-30, with a maximum heat input rate of 2.35 MMBtu/hr, and exhausting through six (6) stacks, identified as S 21, S 14, S 12, S 13, S 15 and S 16.

(k) One (1) all case carburization & draw furnace, identified as K-41, with a maximum heat input rate of 0.379 MMBtu/hr, and exhausting through one (1) stack, identified as S 20.

(l) One (1) carburization & draw furnace, identified as K-304, with a maximum heat input rate of 1.517 MMBtu/hr, and exhausting through four (4) stacks, identified as S 3, S 4, S 5, and S7.

(m) One (1) continuous draw furnace, identified as 831, with a maximum heat input rate of 0.25 MMBtu/hr, and exhausting through one (1) stack, identified as S 40.

(n) One (1) lubrite tank heater, with a maximum heat input rate of 0.2275 MMBtu/hr, and exhausting through one (1) stack, identified as S 31.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.2.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2 (Process Operations), particulate emissions from the five (5) shot blasters shall be limited as follows:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions 326 IAC 6-3-2 (lb/hr)
Panghorn Rotoblast (SB-159)	0.36	2.06
Wheelabrator Type K Multi Tablblast (SB-185)	0.358	2.06
Panghorn Rotoblast (SB-821)	0.36	2.06
Wheelabrator Tumblast (SB-836)	0.357	2.06
No. 2 Wheelabrator Tablblast (859)	0.36	2.06

Compliance Determination Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.2.2 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is not required to test this emission units by this permit. However, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.2.3 Particulate Matter (PM)

The Dust collector for PM control shall be in operation at all times when any of the five (5) shot blaster is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

There are no Compliance Monitoring Requirements applicable to these emission units.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

There are no Record Keeping and Reporting Requirements applicable to these emission units.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**Auburn Gear, Inc.**
Address:	**400 East Auburn Drive**
City:	**Auburn**
Phone #:	**(219) 925-3200**
MSOP #:	**033-13672-00015**

I hereby certify that Auburn Gear, Inc. is **9** still in operation.
9 no longer in operation.

I hereby certify that Auburn Gear, Inc. is
9 in compliance with the requirements of MSOP **033-13672-00015**.
9 not in compliance with the requirements of MSOP **033-13672-00015**.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY:_____PHONE NO. ( )_____
LOCATION: (CITY AND COUNTY)_____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP:_____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____

_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a **Minor Source Operating Permit**

Source Background and Description

Source Name: Auburn Gear, Inc.
Source Location: 400 East Auburn Drive, Auburn, Indiana 46706
County: Dekalb
SIC Code: 3566
Operation Permit No.: 033-13672-00015
Permit Reviewer: Adeel Yousuf / EVP

The Office of Air Quality (OAQ) has reviewed an application from Auburn Gear, Inc. relating to the operation of differential, shaft and gear manufacturing facility.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) Two (2) natural gas fired boilers, identified as Plant boiler # 1 and # 2, each with a maximum heat input rate of 5.146 million (MM) British thermal units (Btu) per hour, each exhausting through one (1) stack, identified as BO 1 and BO 2, respectively, and each installed in 1955.

(b) One (1) natural gas fired boiler, identified as office hot water boiler (BO 3), with a maximum heat input rate of 1.155 MMBtu/hr, exhausting through one (1) stack, identified as S34, and installed in 1961.

(c) One (1) shot blaster, identified as Wheelabrator Tumblast (SB-836), blasting cast steel S-460 with a maximum rate of 714 lbs/hr, using a baghouse as control, and exhausting through one (1) stack identified as S45.

(d) One (1) shot blaster, identified as Panghorn Rotoblast (SB-159), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(e) One (1) shot blaster, identified as Wheelabrator Type K Multi Tblblast (SB-185), blasting cast steel S-230 with a maximum rate of 716 lbs/hr, using a baghouse as control, and exhausting inside the building.

Notes: One (1) permitted cold ring degreaser was removed.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

(a) One (1) shot blaster, identified as Panghor Rotoblast (SB-821), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(b) One (1) shot blaster, identified as No. 2 Wheelabrator Tablablast (SB-859), blasting cast steel S-170 with a maximum rate of 718 lbs/hr, using a baghouse as control, and exhausting inside the building.

(c) Three (3) Rx atmosphere gas generators, identified as K-30, K-41, and K-304, each with a maximum heat input capacity of 0.455 MMBtu/hr, and each exhausting through one (1) stack, identified as S 10, S 11 and S 8, respectively.

(d) One (1) heated water spray washer, identified as 40, with a maximum heat input rate of 0.076, and exhausting through two (2) stacks, identified as S 22 and S 23.

(e) One (1) heated water spray washer, identified as 50, with a maximum heat input rate of 0.152, and exhausting through two (2) stacks, identified as S 28 and S 30.

(f) One (1) carburization & draw furnace with washer, identified as K-22, with a maximum heat input rate of 11.54 MMBtu/hr, and exhausting through five (5) stacks, identified as S 40, S 41, S 42, S 43, and S 44.

(g) One (1) carburization & draw furnace, identified as K-30, with a maximum heat input rate of 2.35 MMBtu/hr, and exhausting through six (6) stacks, identified as S 21, S 14, S 12, S 13, S 15 and S 16.

(i) One (1) all case carburization & draw furnace, identified as K-41, with a maximum heat input rate of 0.379 MMBtu/hr, and exhausting through one (1) stack, identified as S 20.

(j) One (1) carburization & draw furnace, identified as K-304, with a maximum heat input rate of 1.517 MMBtu/hr, and exhausting through four (4) stacks, identified as S 3, S 4, S 5, and S7.

(k) One (1) continuous draw furnace, identified as 831, with a maximum heat input rate of 0.25 MMBtu/hr, and exhausting through one (1) stack, identified as S 40.

(l) One (1) lubrite tank heater, with a maximum heat input rate of 0.2275 MMBtu/hr, and exhausting through one (1) stack, identified as S 31.

New Emission Units and Pollution Control Equipment

There are no new emission units during this review process.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) OP 17-02-90-0103, issued on March 18, 1986.

Enforcement Issue

(a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment.*

(b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
BO 1	Boiler 1	30	1.75	1700	370
BO 2	Boiler 2	30	1.75	1700	370
S 21	K-30 Carb.	30.5	2.50	7850	90
S 14	K-30 Washer	30	2.0	11425	95
S 12	K-30 Draw Fur.	30	1.5	5500	93
S 10	K-30 Rx. gen.	29.5	0.67	100	120
S 13	K-30 Furn. In	30	1.5	5500	110
S 15	K-30 Tube Vent	30	2.5	500	120
S 16	K-30 burner Vent	30	0.83	100	95
S 20	K-41 Furnace	31.5	2.0	9150	110
S 11	K-41 Rx gen.	29.5	0.67	100	120
S 8	K-304 Rx. gen.	29.5	0.83	100	120
S 7	K-304 Tube vent	29.5	1.5	400	120
S 6	K-30 Buner vent	29.5	0.83	100	120
S 5	K-304 Furnace In	29.5	1.5	5500	110
S 3	K-304 Carb.	30	1.5	11190	110
S 4	K-304 Wash	29.5	1.5	11425	93
S40	831 Draw Furnace	30	1.5	100	110
S 22	40 Washer	32.7	1.0	100	90
S 23	40 Washer	32	1.5	200	80
S 28	50 Washer	31.5	1.0	400	95
S 30	50 Washer	31.5	1.5	600	80
S 26	50 Dryer	31.5	1.0	400	95
S 27	50 Dryer	31.5	1.25	10	85
S 34	Boiler 3	31.0	1.0	400	120
S 40	K-22 Carb. Vent	30	1.33	150	120
S 41	K-22 Burner Vent	30	1.0	700	150
S 42	K-22 Wash Vent	30	1.33	150	120
S 43	K-22 Wash Burner	30	1.0	1100	120
S 44	K-22 Draw Furnace	30	1.33	400	120
S 45	836 Blast Cleaner	28	1.0	15000	ambient

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on December 27, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (six (6) pages)

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	63.07
PM-10	63.81
SO_2	0.08
VOC	0.71
CO	10.78
NO_x	12.83

HAP's	Potential To Emit (tons/year)
Hexane	less than 10
Formaldehyde	less than 10
TOTAL	less than 25

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3.

(c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Dekalb County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Dekalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Dekalb County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	0.87
PM10	1.61
SO_2	0.08
VOC	0.71
CO	0.24
NO_x	12.83

(a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, with the total emissions indicated in this permit CP-033-13672-00015, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

(a) The three (3) natural gas fired boilers, (ID No. Plant boiler # 1, # 2 and BO 3), are not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40c, Subpart Dc), because the boilers are less than ten (10) million Btu per hour (MMBtu/hr).

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-4.1-1 (New Source Toxics Control)

326 IAC 2-4.1-1 applies to new or reconstructed facilities with potential emissions of any single HAP equal or greater than ten (10) tons per twelve (12) month period and potential emissions of a combination of HAPs greater than or equal to twenty-five (25) tons per twelve (12) month period. Since the source has the potential to emit any single HAP and any combination of HAPs less than 10 tons and less than 25 tons per twelve (12) month period, respectively, the requirements of 326 IAC 2-4.1-1 do not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Dekalb County and the potential to emit any criteria pollutant is less than one hundered (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating)

The three (3) natural gas fired boilers (ID Nos. Plant boiler #1, #2, and BO 3), rated at 5.146, 5.146 and 1.155 million British thermal units per hour, respectively, are subject to the particulate matter limitations of 326 IAC 6-2. Pursuant to this rule, boilers (ID Nos. Plant boiler #1, #2, and BO 3) (constructed before 1983) are limited by the following equation from 326 IAC 6-2-3:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

where

C = 50 u/m^3
Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)
= 5.146+5.146+1.155 = 11.447 MMBtu/hr
N = number of stacks
a = plume rise factor (0.67)
h = stack height in feet. If a number of stacks of different heights exist, average stack height to represent "N" stacks shall be calculated by weighing each stack height with its particulate matter emission rate as follows:

$$h = \frac{\sum_{i=1}^{N} H_i \times pa_i \times Q}{\sum_{i=1}^{N} pa_i \times Q}$$

i=1

where: Pa = the actual controlled emissions rate in lb/mmBtu using the emission factor form AP-42 or stack test data. Stacks constructed after January 1, 1971, shall be credited with GEP stack height only. GEP stack height shall be calculated as specified in 326 IAC 1-7.

$Pt = (50*0.67*30.0)/(76.5*11.447^{0.75}*3^{0.25}) = 1.60$ lbs PM/MMBtu

However, per 326 IAC 6-2-3(d), Pt shall not exceed 0.8 lbs PM/MMBtu, therefore PM emissions from the three (3) boilers (ID Nos. Plant boiler #1, #2, and BO 3) are each limited to 0.8 lbs PM/MMBtu.

compliance calculation:
Potential PM emissions for Plant boiler #1, #2, and BO 3 = 1.9 lb PM/MMCF * (1/1000) (MMCF/MMBtu) = 0.0019 lbs PM/MMBtu.

Potential PM emissions for Plant boiler #1, #2, and BO 3 (0.0019 lbs PM/MMBtu) are less than allowable 0.8 lbs PM/MMBtu, therefore the three (3) boilers (ID Nos. Plant boiler #1, #2, and BO 3) will comply with the requirements of 326 IAC 6-2-3.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the following processes shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

Emission Unit	Process Weight Rate (tons/hr)	Uncontrolled PM Emissions (lb/hr)	Control Efficiency %	Controlled PM Emissions (lb/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Panghorn Rotoblast (SB-159)	0.36	2.88	99	0.0288	2.06
Wheelabrator Type K Multi Tablblast (SB-185)	0.358	2.87	99	0.0287	2.06
Panghorn Rotoblast (SB-821)	0.36	2.88	99	0.0288	2.06
Wheelabrator Tumblast (SB-836)	0.357	2.86	99	0.0286	2.05
No. 2 Wheelabrator Tablblast (SB-859)	0.36	2.88	99	0.0288	2.06

The blasters will comply with the requirements of 326 IAC 6-3-2 by using a baghouse for PM control.

There are no specific requirements applicable to the furnaces at the source.

Conclusion

The operation of this differential, shaft and gear manufacturing facility shall be subject to the conditions of the attached proposed **Minor Source Operating Permit 033-13672-00015**.

Appendix A: Emission Calculations

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn, Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Uncontrolled Potential Emissions (tons/year)

	Emissions Generating Activity		
Pollutant	Natural Gas Combustion	Shot Blasting	**TOTAL**
PM	0.24	62.83	63.07
PM10	0.98	62.83	63.81
SO2	0.08	0.00	0.08
NOx	12.83	0.00	12.83
VOC	0.71	0.00	0.71
CO	10.78	0.00	10.78
total HAPs	0.24	0.00	0.24
worst case single HAP	(hexane) 0.23	0.00	(hexane) 0.23

Total emissions based on rated capacity at 8,760 hours/year.

Controlled Potential Emissions (tons/year)

	Emissions Generating Activity		
Pollutant	Natural Gas Combustion	Shot Blasting	**TOTAL**
PM	0.24	0.63	0.87
PM10	0.98	0.63	1.61
SO2	0.08	0.00	0.08
NOx	12.83	0.00	12.83
VOC	0.71	0.00	0.71
CO	10.78	0.00	10.78
total HAPs	0.24	0.00	0.24
worst case single HAP	(hexane) 0.23	0.00	(hexane) 0.23

Total emissions based on rated capacity at 8,760 hours/year, after control.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn, Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
29.3	256.7

Facilities	MMBtu/hr
Plant Boiler # 1	5.146
Plant Boiler # 2	5.146
K-22 Carburization & Draw Furnace with washer	11.54
K-30 Carburization & Draw Furnace	2.35
K-30 Rx Atmosphere gas generator	0.455
K-41 Rx Atmosphere gas generator	0.455
K-41 Carburization & Draw Furnace	0.379
K-304 Carburization & Draw Furnace	1.517
K-304 Rx Atmosphere gas generator	0.455
# 831 Continuous Draw Furnace	0.25
# 40 Heater water spray washer	0.076
# 50 Heater water spray washer	0.152
Lubrite tank heater	0.2275
Front office hot water boiler	1.155
Total	**29.3035**

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.24	0.98	0.08	12.83	0.71	10.78

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR <100
Utility Boiler
HAPs Emissions

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn, Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
29.3	256.7

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	0.000	0.000	0.010	0.231	0.000

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emission Calculations
Abrasive Blasting - Confined

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Table 1 - Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

	Nozzle Pressure (psig)							
Internal diameter, in	30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Calculations for Panghorn Rotoblast ID: SB-159

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	238
D = Density of abrasive (lb/ft3) From Table 2 =	299
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.25
ID1 = Nozzle internal diameter (in) from Table 3 =	0.25

Flow Rate (FR) (lb/hr) = **718.808** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.004
FR = Flow Rate (lb/hr) =	718.808
w = fraction of time of wet blasting =	0 %
N = number of nozzles =	1

Uncontrolled Emissions =	**2.88 lb/hr**
	12.59 ton/yr
Controlled Emissions =	**0.13 ton/yr**

Calculations for Wheelabrator Type K Multi Tablblast ID: SB-185

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	238
D = Density of abrasive (lb/ft3) From Table 2 =	298
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.25
ID1 = Nozzle internal diameter (in) from Table 3 =	0.25

Flow Rate (FR) (lb/hr) = **716.404** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.004
FR = Flow Rate (lb/hr) =	716.404
w = fraction of time of wet blasting =	0 %
N = number of nozzles =	1

Uncontrolled Emissions =	**2.87 lb/hr**
	12.55 ton/yr
Controlled Emissions =	**0.13 ton/yr**

Total Uncontrolled Emissions =	**25.14**	**ton/yr**
Total Controlled Emissions =	**0.25**	**ton/yr**

METHODOLOGY

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs
Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)
E = EF x FR x (1-w/200) x N
w should be entered in as a whole number (if w is 50%, enter 50)

Appendix A: Emission Calculations
Abrasive Blasting - Confined

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn, Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Table 1 - Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

	Nozzle Pressure (psig)							
Internal diameter, in	30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Calculations for Panghorn Rotoblast ID: SB-821

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	238
D = Density of abrasive (lb/ft3) From Table 2 =	299
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.25
ID1 = Nozzle internal diameter (in) from Table 3 =	0.25

Flow Rate (FR) (lb/hr) = **718.808** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.004
FR = Flow Rate (lb/hr) =	718.808
w = fraction of time of wet blasting =	0 %
N = number of nozzles =	1

Uncontrolled Emissions =	**2.88 lb/hr**
	12.59 ton/yr
Controlled Emissions =	**0.13 ton/yr**

Calculations for Wheelabrator Tumblast ID: SB-836

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	238
D = Density of abrasive (lb/ft3) From Table 2 =	297
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.25
ID1 = Nozzle internal diameter (in) from Table 3 =	0.25

Flow Rate (FR) (lb/hr) = **714.000** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.004
FR = Flow Rate (lb/hr) =	714.000
w = fraction of time of wet blasting =	0 %
N = number of nozzles =	1

Uncontrolled Emissions =	**2.86 lb/hr**
	12.51 ton/yr
Controlled Emissions =	**0.13 ton/yr**

Total Uncontrolled Emissions =	**25.10**	**ton/yr**
Total Controlled Emissions =	**0.25**	**ton/yr**

METHODOLOGY

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs
Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)
E = EF x FR x (1-w/200) x N
w should be entered in as a whole number (if w is 50%, enter 50)

Appendix A: Emission Calculations
Abrasive Blasting - Confined

Company Name: Auburn Gear, Inc.
Address City IN Zip: 400 E. Auburn Dr., Auburn, Indiana 46706
CP: 033-13672
Plt ID: 033-00015
Reviewer: Adeel Yousuf / EVP

Table 1 - Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

	Nozzle Pressure (psig)							
Internal diameter, in	30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Calculations for No.2 Wheelabrator Tablblast ID: SB-859

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =	238
D = Density of abrasive (lb/ft3) From Table 2 =	299
D1 = Density of sand (lb/ft3) =	99
ID = Actual nozzle internal diameter (in) =	0.25
ID1 = Nozzle internal diameter (in) from Table 3 =	0.25

Flow Rate (FR) (lb/hr) = **718.808** per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =	0.004
FR = Flow Rate (lb/hr) =	718.808
w = fraction of time of wet blasting =	0 %
N = number of nozzles =	1

Uncontrolled Emissions =	**2.88 lb/hr**
	12.59 ton/yr
Controlled Emissions =	**0.13 ton/yr**

METHODOLOGY

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs
Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)
E = EF x FR x (1-w/200) x N
w should be entered in as a whole number (if w is 50%, enter 50)